

IN THE CLAIMS

Please amend the claims as follows:

1-17. (Canceled)

18. (Currently Amended) A substrate comprising:

a plurality of mounting lands to mount corresponding contacts of an integrated circuit package, each land having a circular perimeter and a geometric center, wherein each land has a hollow via therein that is offset with respect to the geometric center of the land, wherein each via has a geometric center, wherein the geometric center of each via is in a region between the geometric center and the perimeter of its associated land, wherein the geometric centers of vias of adjacent lands are offset in substantially a same direction with respect to the geometric centers of the corresponding lands, and wherein each via comprises a via cap; and

a plurality of solder balls, each solder ball adhering to a respective one of the lands, each solder ball adhering to the entire respective land.

19. (Currently Amended) The substrate recited in claim 18, wherein each via is circular ~~has a geometric center, and wherein the geometric center of each via is in a region between the geometric center and the perimeter of its associated land.~~

20. (Currently Amended) The substrate recited in claim 18 ~~[[19]]~~, wherein each via is to inhibit a thermally expansive substance residing in the vias from causing adjacent contacts of the integrated circuit package to be bridged when the lands and contacts are subjected to heat ~~wherein the geometric centers of vias of adjacent lands are offset in substantially the same direction.~~

21. (Currently Amended) An electronic assembly comprising:
an integrated circuit package having a plurality of contacts;
a substrate having a plurality of mounting lands, each land having a geometric center and an edge, each land having a hollow via therein extending into the substrate, each via having a geometric center in a region between the geometric center and the edge of its associated land, wherein the lands comprise a first group having vias whose geometric centers are offset in a first direction with respect to the geometric centers of the lands in the first group, and a second group having vias whose geometric centers are offset in a second direction with respect to the geometric centers of the lands in the second group; and
a plurality of solder balls, each coupling one of the plurality of contacts to a respective one of the plurality of lands, each of the solder balls contacting substantially the entire respective land to the edge of such land.
22. (Currently Amended) The electronic assembly recited in claim 21, wherein each via is to inhibit ~~inhibits~~ a thermally expansive substance residing in the vias from causing adjacent contacts of the integrated circuit package to be bridged when the lands and contacts are subjected to heat.
23. (Original) The electronic assembly recited in claim 22, wherein the thermally expansive substance comprises a volatile organic compound.
24. (Original) The electronic assembly recited in claim 22, wherein the thermally expansive substance comprises a volatile liquid that forms a portion of a material from the group consisting of a solder mask, a solder flux, a solder paste, a solvent, and a via cap.

25-27 (Canceled)

28. (Currently Amended) An electronic system comprising an electronic assembly having:
an integrated circuit package having a plurality of pads,
a substrate having a plurality of mounting lands, each land having a geometric center and
an edge, each land having a via therein, each via having a geometric center in a region between
the geometric center and the edge of its associated land, wherein the geometric centers of vias of
adjacent lands are offset in substantially a same direction with respect to the geometric centers of
the corresponding lands; and

a plurality of solder balls, each coupling one of the plurality of pads to a respective one of
the plurality of lands, each of the solder balls contacting substantially the entire respective land
to the edge of such land.

29-30 (Canceled)

31. (Currently Amended) The substrate recited in claim 18, wherein the edge of each land
defines ~~has an edge defining~~ a perimeter, and wherein each solder ball covers the entire
respective land, including the perimeter of such land.

32. (Currently Amended) The substrate recited in claim 18, wherein the edge of each land
defines ~~has an edge defining~~ a perimeter, and wherein each solder ball adheres to the entire
respective land within the perimeter of such land.

33. (Currently Amended) The substrate recited in claim 18, wherein each land has ~~an edge~~
~~and~~ a surface defined by the edge, and wherein each solder ball adheres to substantially the entire
surface of the respective land.

34. (Currently Amended) A substrate comprising:

a plurality of mounting lands, each land having a geometric center, wherein each land has a via therein having a geometric center that is offset with respect to the geometric center of the land, and wherein the geometric centers of vias of adjacent lands are offset in substantially a same direction with respect to the geometric centers of the corresponding lands; and

a plurality of solder balls, each solder ball adhering to a respective one of the lands, each solder ball adhering to the entire respective land without any material intervening between the solder ball and the respective land.

35. (Currently Amended) The substrate recited in claim 34, wherein each land has an edge, ~~wherein each via has a geometric center,~~ and wherein the geometric center of each via is in a region between the geometric center and the edge of its associated land.

36. (Currently Amended) The substrate recited in claim 34, wherein each via is circular ~~the geometric centers of vias of adjacent lands are offset in substantially the same direction.~~

37. (Currently Amended) An electronic assembly comprising:

an integrated circuit package having a plurality of contacts and a centerline separating the plurality of contacts into two substantially equal portions; and

a substrate having a plurality of mounting lands respectively aligned with the plurality of contacts, wherein at least the contacts or the lands are coated with solder, each land having a circular perimeter and a geometric center, each land having a via offset therein extending into the substrate, each via having a geometric center located in a region between the geometric center and the perimeter of its associated land, wherein the lands comprise a first group having vias whose geometric centers are offset in a first direction with respect to the geometric centers of the corresponding lands of the first group, wherein the lands comprise ~~[[and]]~~ a second group having vias whose geometric centers are offset in a second direction with respect to the geometric centers of the corresponding lands of the second group, wherein the first direction is opposite to the second direction, and wherein the first and second groups are on opposite sides of the centerline.

38. (Previously Presented) The electronic assembly recited in claim 37, wherein, during a solder reflow operation, surface tension forces in molten solder residing between the respectively aligned contacts and lands are substantially equalized between the first and second groups of lands.

39. (Previously Presented) The electronic assembly recited in claim 38, wherein each via inhibits a thermally expansive substance residing therein from causing adjacent contacts of the integrated circuit package to be bridged during the solder reflow operation.

40. (Previously Presented) The electronic assembly recited in claim 39, wherein the thermally expansive substance comprises a volatile organic compound.

41. (Previously Presented) The electronic assembly recited in claim 39, wherein the thermally expansive substance comprises a volatile liquid that forms a portion of a material from the group consisting of a solder mask, a solder flux, a solder paste, a solvent, and a via cap.

42. (Previously Presented) The electronic assembly recited in claim 37, wherein the lands and vias are circular.

43. (Currently Amended) A substrate comprising a plurality of mounting lands and a centerline separating the plurality of lands into two substantially equal portions, each land having a circular perimeter and a geometric center, wherein each land has a via offset therein extending into the substrate, wherein each via has a geometric center located in a region between the geometric center and the perimeter of its associated land, wherein the lands comprise a first group having vias whose geometric centers are offset in a first direction with respect to the geometric centers of the corresponding lands of the first group, wherein the lands comprise [[and]] a second group having vias whose geometric centers are offset in a second direction with respect to the geometric centers of the corresponding lands of the second group, and wherein the first and second groups are on opposite sides of the centerline.

44. (Canceled)
45. (Previously Presented) The substrate recited in claim 43, wherein the vias are circular.
46. (Canceled)
47. (Currently Amended) The substrate recited in claim 43, wherein the first direction is opposite to the second direction ~~wherein the geometric centers of vias of the first group of lands are offset in the first direction and the geometric centers of vias of the second group of lands are offset in the second direction.~~